

Chemistry 1212L

Principles of Chemistry II Lab

Spring 2020



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**and by appointment

Course Information

Class: Chem 1212L Section 01 (CRN 10191 - 1 credit hour)
Meeting Time: Wednesday 2:00 – 3:50 pm
Room: TLC 3108

Course Description

This laboratory course is designed to complement the material covered in Chem 1212 and is a co-requisite of that course. A series of experiments treat the fundamental behavior of gases, liquids, solids, and solutions including their thermodynamics, kinetics, and equilibria.

Required Materials: You should bring a notebook and pen or pencil to record observations as well as a calculator to perform calculations in lab. This course will employ the MeasureNet system to acquire data in some of our labs. You will need to log in to www.measurenet.net to access your data.

Learning Outcomes

1. Students will apply principles of thermodynamics, kinetics, and equilibria to describe observed behavior of gases, liquids, solids, and solutions
2. Students will operate cooperatively to solve laboratory challenges through the application of practical, creative, and critical thinking skills.
3. Students will apply Microsoft Excel to analyze chemical data.
4. Students will communicate results and conclusions in a written format.
5. Students will demonstrate good laboratory technique, safe lab conduct, and cooperation with other students.

Course Assessment

Pre-Lab Questions (10%)

To help you prepare ahead of time for each lab, a set of pre-lab questions will be made available as a 'quiz' on CourseDen and will be due at the beginning of the corresponding lab period. A maximum of two attempts will be allowed for each quiz.

Laboratory Conduct (15%)

You are responsible for working in a safe, timely manner to complete your experiment in the allotted time. After completion of an experiment, make sure to clean up the lab space, clean and store glassware, and unplug hotplates. Failure to follow safety protocols, complete your experiment on time, or properly clean your lab space will result in a deduction from your Lab Conduct grade.

Lab Reports (60%)

Following each lab, you will be required to complete a lab worksheet (100 pts each). An **electronic copy** of this document along with any corresponding Excel files must be submitted via the **CourseDen Dropbox** before the start of the next lab period. One separately completed report **per individual** is required. Reports are to be typed (**no photos of writing**). Reports will be graded for proper formatting and content, scientifically accurate and clear discussion, and correct use of *Standard English*. Reports *will not be graded for the accuracy of measurements* unless a specific exception is made in the assignment.

Final Exam (15%)

A final exam testing practical laboratory knowledge will be given on the last day of class. This exam will contain questions that can only be answered by correctly executing experimental techniques learned over the course of the semester, so make sure you are confident in your ability to perform these techniques on your own.

Grading Scale

A	90 – 100
B	80 – 89
C	70 – 79
D	60 – 69
F	0 – 59

Grade Calculation Formula

$$\text{Final Score} = (\text{Pre-Lab \%}) \cdot (0.10) + (\text{Conduct \%}) \cdot (0.15) + (\text{Report Average \%}) \cdot (0.70) \\ + (\text{Final Exam \%}) \cdot (0.15)$$

Course Policies and Information

Extra-Credit Policy

No extra credit is accepted for this course.

Make-up Policy

Laboratory attendance is mandatory. If a student fails to attend a lab or is removed from the lab due to a safety violation, the student will receive a zero for any grades and assignments associated with that lab. If an emergency forces a student to miss that day's lab, the lab grade will be waived **only if official documentation is presented**. A maximum of **one exemption total** will be allowed. **No make-up labs will be given.**

Student Conduct

Students are obligated to abide by the conduct guidelines in the university catalog. Respect and courtesy of all students while in the classroom is required. The following are also mandatory:

1. Experiments in the chemistry laboratory routinely employ hazardous materials and equipment. Proper dress and personal protective equipment are required to participate in a lab. **Failure to follow safe laboratory conduct or observe dress code will result in expulsion from that day's lab and a zero on you lab report and associated notebook and conduct grades.**
2. We will discuss the experiment and associated hazards at the beginning of each lab, so it is important to be on time. **Arrival after the conclusion of the pre-lab lecture constitutes a safety hazard and you will not be allowed to perform that day's lab and receive a zero on the associated lab report and conduct grades.**
3. This classroom space is used by multiple classes, so it is imperative to the safety of other students that **all stations are thoroughly cleaned** after the completion of that day's experiments. Failure to do so will result in a grade reduction for that lab.

Academic Honesty

'Sharing' lab assignments or material therein between students is plagiarism. Such 'sharing' can include, but is not limited to, copying any part from another assignment (i.e. **yours or another student's**) with no or minimal change. **Manipulation of data** is a gross ethical violation and is expressly forbidden. **Instances of plagiarism or data manipulation will result in a '0' for that report and possible additional action per University regulations on Academic Dishonesty.**

Any form of academic dishonesty—including but not limited to cheating or plagiarism—will result in a failing grade on the relevant assignment as well as possible additional action. Please be familiar with the definitions of academic dishonesty and plagiarism as laid out in the Student Handbook, which can be found at the link: <http://www.westga.edu/handbook/>

Disabilities Act / Accessibility for the Course

If you are a student with a disability as defined under the Americans with Disabilities Act and require assistance or support services, please notify me and provide me with a copy of your packet from Student Services. The university will provide you with resources for any audio/visual needs that you may have with the learning management system or course content.

It is critical that you contact UWG Accessibility Services immediately to find out what accommodations are necessary so we can work together to facilitate your success in this class. Please consult the UWG Accessibility Services site <http://www.westga.edu/accessibility> or call (678) 839-6428 for more details regarding accessibility for this course.

University Policies and Academic Support

Please review the Common Language for all university course syllabi at the address:

https://www.westga.edu/administration/vpaa/assets/docs/faculty-resources/common_language_for_course_syllabi_v2.pdf

This document contains important information regarding Academic Support, Online Courses, Honor Code, Email Policy, Credit Hour Policy, and HB 280 (Campus Carry).

Note on Syllabus Modifications

I reserve the right to modify this syllabus at any time during the course of the term, particularly with regards to course schedule. Students will be notified of all syllabus modifications. In a case where a substantial modification is required, I will reissue a revised syllabus.

Tentative Schedule

January 8	NO LAB
January 15	Orientation; Using Microsoft Excel in Chemistry
January 22	Lab 12 - Enthalpy of Vaporization
January 29	Lab 13 - Freezing Point Depression
February 5	Lab 14 - Kinetics I (Method of Initial Rates)
February 12	Lab 15 - Kinetics II (Integrated Rate Laws)
February 19	Lab 16 - Chemical Equilibrium
February 26	Lab 17 - pH Measurements
March 4	Lab 18 - Buffers
March 11	Lab 19 - Titrations
March 18	SPRING BREAK - NO CLASSES
March 25	Lab 20 - Qualitative Analysis
April 1	Lab 20 - Qualitative Analysis contd.
April 8	Lab 21 - Enthalpy of Hydration
April 15	Lab 22 - Reaction Entropy
April 22	LAB FINAL